Listing of Claims

1. (Canceled)

2. (Canceled)

3. (Previously presented) A method for editing a printed circuit board (PCB) master design during an editing session throughout which each of first and second users may edit a PCB master design and view edits made to the same PCB master design by the other of the first and second users during the editing session, comprising:

transmitting at least a portion of the PCB master design to the first and second users at respective first and second clients for simultaneous graphical display on each of said clients, wherein

each of the graphical displays on the first and second clients includes a representation of common PCB artwork corresponding to a region of the PCB master design, the displayed common PCB artwork including a plurality of associated PCB design objects, and

each of the first and second clients can simultaneously view the common PCB artwork and edit the associated PCB design objects;

receiving, during the editing session, a first edit request from the first client and a second edit request from the second client;

applying the first and second edit requests to the PCB master design; and

transmitting synchronization data to the first and second clients, the synchronization data permitting update of the graphical displays on the first and second clients during the editing session to reflect the first and second edits.

4. (Previously presented) The method of claim 3, further comprising:

receiving a subsequent edit request from the first client to edit an associated PCB design object; and

locking that PCB design object so as to prevent editing of that PCB design object based on a request received from the second client.

5. (Previously presented) The method of claim 3, wherein:

at least one of the edit requests is automatically generated in response to selection of a PCB design object and a command,

the selected PCB design object is at least one of a route, a component, a trace, a via, text, and a drawing object, and

the command is at least one of move left, move right, delete and add.

6. (Previously presented) The method of claim 3, further comprising:

placing the first and second edit requests in a queue; and

applying the first and second edit requests on a first-in-first-out (FIFO) basis.

7. (Previously presented) The method of claim 3, wherein transmitting at least a portion of the PCB master design comprises transmitting the entire PCB master design.

8. (Previously presented) The method of claim 3, further comprising:

determining if the first edit request conflicts with the second edit request.

9. (Previously presented) The method of claim 8, wherein said determining if the first edit request conflicts with the second edit request comprises at least one of:

determining whether acceptance of both the first and second edit requests will violate a spacing rule,

determining whether acceptance of both the first and second edit requests will violate a geometry rule, and

determining whether acceptance of both the first and second edit requests will violate a connectivity rule.

10. (Previously presented) The method of claim 3, wherein:

one of the edit requests is automatically generated in response to the first or second user selecting, moving, and then releasing a first PCB design object, and

another of the edit requests is automatically generated in response to the first or second user selecting a second PCB design object and then moving the second PCB design object to a graphically represented deletion area.

11. (Previously presented) A method for editing a printed circuit board (PCB) master design during an editing session throughout which each of first and second users may edit a PCB master design and view edits made to the same PCB master design by the other of the first and second users during the editing session, comprising:

transmitting at least a portion of the PCB master design to the first and second users at respective first and second clients for simultaneous graphical display on each of said clients, wherein

each of the graphical displays on the first and second clients includes a representation of common PCB artwork corresponding to a region of the PCB master design, the displayed common PCB artwork including a plurality of associated PCB design objects, and

each of the first and second clients can simultaneously view the common PCB artwork and edit the associated PCB design objects;

receiving, during the editing session, a first edit request from the first client and a second edit request from the second client;

applying the first edit request to the PCB master design;

transmitting synchronization data to the first and second clients, the synchronization data permitting update of the graphical displays on the first and second clients during the editing session to reflect the application of the first edit request;

determining if the first edit request conflicts with the second edit request; and

reporting a conflict between the first and second edit requests to the second client.

12. (Canceled)

13. (Canceled)

14. (Previously presented) A server for receiving and processing requests to edit a printed circuit board (PCB) master design during an editing session throughout which each of first and second users may edit a PCB master design and view edits made to the same PCB master design by the other of the first and second users during the editing session, comprising:

a database for maintaining the master design;

connections to first and second clients; and

a processor configured to

transmit at least a portion of the PCB master design to the first and second users at the respective first and second clients for simultaneous graphical display on each of said clients, wherein

each of the graphical displays on the first and second clients includes a representation of common PCB artwork corresponding to a region of the PCB master design, the displayed common PCB artwork including a plurality of associated PCB design objects, and

each of the first and second clients can simultaneously view the common PCB artwork and edit the associated PCB design objects,

receive, during the editing session, a first edit request from the first client and a second edit request from the second client,

apply the first and second edit requests to the PCB master design, and

transmit synchronization data to the first and second clients, the synchronization data permitting update of the graphical displays on the first and second clients during the editing session to reflect the first and second edits.

15. (Previously presented) The server of claim 14, wherein the processor is further configured to:

receive a subsequent edit request from the first client to edit an associated PCB design object, and

lock that PCB design object so as to prevent editing of that PCB design object based on a request received from the second client.

16. (Previously presented) The server of claim 14, wherein:

at least one of the edit requests is automatically generated in response to selection of a PCB design object and a command,

the selected PCB design object is at least one of a route, a component, a trace, a via, text, and a drawing object, and

the command is at least one of move left, move right, delete and add.

17. (Previously presented) The server of claim 14, wherein the processor is further configured to:

place the first and second edit requests in a queue; and

apply the first and second edit requests on a first-in-first-out (FIFO) basis.

18. (Previously presented) The server of claim 14, wherein the server is configured to transmit at least a portion of the PCB master design by transmitting the entire PCB master design.

19. (Previously presented) The server of claim 14, wherein the processor is further configured to:

determine if the first edit request conflicts with the second edit request.

20. (Previously presented) The server of claim 19, wherein the processor is configured to determine if the first edit request conflicts with the second edit request by:

determining whether acceptance of both the first and second edit requests will violate a spacing rule,

determining whether acceptance of both the first and second edit requests will violate a geometry rule, and

determining whether acceptance of both the first and second edit requests will violate a connectivity rule.

21. (Previously presented) The server of claim 14, wherein:

one of the edit requests is automatically generated in response to the first or second user selecting, moving, and then releasing a first PCB design object, and

another of the edit requests is automatically generated in response to the first or second user selecting a second PCB design object and then moving the second PCB design object to a graphically represented deletion area.

22. (Previously presented) A server for receiving and processing requests to edit a printed circuit board (PCB) master design during an editing session throughout which each of first and second users may edit a PCB master design and view edits made to the same PCB master design by the other of the first and second users during the editing session, comprising:

a database for maintaining the master design;

connections to first and second clients; and

a processor configured to

transmit at least a portion of the PCB master design to the first and second users at respective first and second clients for simultaneous graphical display on each of said clients, wherein

each of the graphical displays on the first and second clients includes a representation of common PCB artwork corresponding to a region of the PCB master design, the displayed common PCB artwork including a plurality of associated PCB design objects, and

each of the first and second clients can simultaneously view the common PCB artwork and edit the associated PCB design objects,

receive, during the editing session, a first edit request from the first client and a second edit request from the second client,

apply the first edit request to the PCB master design,

transmit synchronization data to the first and second clients, the synchronization data permitting update of the graphical displays on the first and second clients during the editing session to reflect the application of the first edit request,

determine if the first edit request conflicts with the second edit request, and

report a conflict between the first and second edit requests to the second client.

23. (Canceled)

24. (Canceled)

25. (Previously presented) A machine-readable storage medium having stored thereon data representing sequences of instructions which, when executed by a processor, cause the processor to perform steps comprising:

transmitting at least a portion of a PCB master design during an editing session throughout which each of first and second users may edit a PCB master design and view edits made to the same PCB master design by the other of the first and second users during the editing session, wherein

the at least a portion of the PCB master design is transmitted to the first and second users at respective first and second clients for simultaneous graphical display on each of said clients,

each of the graphical displays on the first and second clients includes a representation of common PCB artwork corresponding to a region of the PCB master design, the displayed common PCB artwork including a plurality of associated PCB design objects, and

each of the first and second clients can simultaneously view the common PCB artwork and edit the associated PCB design objects;

receiving, during the editing session, a first edit request from the first client and a second edit request from the second client;

applying the first and second edit requests to the PCB master design; and

transmitting synchronization data to the first and second clients, the synchronization data permitting update of the graphical displays on the first and second clients during the editing session to reflect the first and second edits.

26. (Previously presented) The machine readable storage medium of claim 25, comprising further instructions for performing steps comprising:

receiving a subsequent edit request from the first client to edit an associated PCB design object; and

locking that PCB design object so as to prevent editing of that PCB design object based on a request received from the second client.

27. (Previously presented) The machine readable storage medium of claim 25, wherein:

at least one of the edit requests is automatically generated in response to selection of a PCB design object and a command,

the selected PCB design object is at least one of a route, a component, a trace, a via, text, and a drawing object, and

the command is at least one of move left, move right, delete and add.

28. (Previously presented) The machine readable storage medium of claim 25, comprising further instructions for performing steps comprising:

placing the first and second edit requests in a queue; and

accepting the first and second edit requests on a first-in-first-out (FIFO) basis.

29. (Previously presented) The machine readable storage medium of claim 25, wherein transmitting at least a portion of a PCB master design comprises transmitting the entire PCB master design.

30. (Previously presented) The machine readable storage medium of claim 25, comprising further instructions for performing steps comprising:

determining if the first edit request conflicts with the second edit request.

31. (Previously presented) The machine readable storage medium of claim 30, wherein said determining if the first edit request conflicts with the second edit request comprises at least one of:

determining whether acceptance of both the first and second edit requests will violate a spacing rule,

determining whether acceptance of both the first and second edit requests will violate a geometry rule, and

determining whether acceptance of both the first and second edit requests will violate a connectivity rule.

32. (Previously presented) The machine readable storage medium of claim 25, wherein:

one of the edit requests is automatically generated in response to the first or second user selecting, moving, and then releasing a first PCB design object, and

another of the edit requests is automatically generated in response to the first or second user selecting a second PCB design object and then moving the second PCB design object to a graphically represented deletion area.

33. (Previously presented) A machine-readable storage medium having stored thereon data representing sequences of instructions which, when executed by a processor, cause the processor to perform steps comprising:

transmitting at least a portion of a PCB master design during an editing session throughout which each of first and second users may edit a PCB master design and view edits made to the same PCB master design by the other of the first and second users during the editing session, wherein

the at least a portion of the PCB master design is transmitted to the first and second users at respective first and second clients for simultaneous graphical display on each of said clients,

each of the graphical displays on the first and second clients includes a representation of common PCB artwork corresponding to a region of the PCB master design, the displayed common PCB artwork including a plurality of associated PCB design objects, and

each of the first and second clients can simultaneously view the common PCB artwork and edit the associated PCB design objects;

receiving, during the editing session, a first edit request from the first client and a second edit request from the second client;

applying the first edit request to the PCB master design;

transmitting synchronization data to the first and second clients, the synchronization data permitting update of the graphical displays on the first and second clients during the editing session to reflect the application of the first edit request;

determining if the first edit request conflicts with the second edit request; and

reporting a conflict between the first and second edit requests to the second client.

34. (Previously presented) A method for editing a printed circuit board (PCB) master design, comprising:

displaying on first and second clients a representation of common PCB artwork corresponding to a region of a PCB master design, wherein the displayed PCB artwork includes a plurality of associated PCB design objects, and wherein each of the first and second clients can simultaneously view the common PCB artwork and edit the associated PCB design objects;

editing the PCB master design from the first client during an editing session throughout which each of first and second users at the respective first and second clients may edit the PCB master design and view edits made to the PCB master design by the other of the first and second users during the editing session;

editing the PCB master design from the second client during the editing session;

updating the display of the first client, during the editing session, to reflect one or more edits made from the second client during the editing session; and

updating the display of the second client, during the editing session, to reflect one or more edits made from the first client during the editing session.

35. (Previously presented) The method of claim 34, further comprising:

locking an associated PCB design object upon selection of said PCB design object at the first client; and

preventing, based on said selection, editing of the selected PCB design object from the second client.

36. (Previously presented) The method of claim 34, wherein:

at least one of the edits is automatically generated in response to selection of a PCB design object and a command,

the selected PCB design object is at least one of a route, a component, a trace, a via, text, and a drawing object, and

the command is at least one of move left, move right, delete and add.

37. (Previously presented) The method of claim 34, further comprising:

receiving at one of the first and second clients a report of a conflict between third and fourth edits respectively attempted from the first and second clients.

38. (Previously presented) The method of claim 34, wherein the region of the PCB master design comprises the entire PCB master design.

39. (Previously presented) A method for editing a printed circuit board (PCB) master design during an editing session throughout which each of first and second users may edit exclusive sub-portions of a PCB master design and view edits made to the PCB master design by the other of the first and second users during the editing session, comprising:

transmitting at least a portion of the PCB master design to the first and second users at respective first and second clients for simultaneous graphical display on each of said clients, the PCB master design portion including first and second exclusive sub-portions, each of the graphical displays on the first and second clients including a representation of common PCB artwork corresponding to a region of a PCB master design, the region including first and second sub-regions respectively corresponding to the first and second exclusive sub-portions, wherein

the displayed common PCB artwork includes a plurality of PCB design objects associated with the first sub-region and a plurality of PCB design objects associated with the second sub-region,

the first client can simultaneously edit PCB design objects associated with the first sub-region and view edits being made to PCB design objects associated with the second sub-region, and

the second client can simultaneously edit PCB design objects associated with the second sub-region and view edits being made to PCB design objects associated with the first sub-region;

receiving edit requests from the first and second clients during the editing session;

accepting requests from the first client to edit PCB design objects associated with the first sub-region;

accepting requests from the second client to edit PCB design objects associated with the second sub-region;

rejecting requests from the first client to edit PCB design objects associated with the second sub-region;

rejecting requests from the second client to edit PCB design objects associated with the first sub-region; and

transmitting synchronization data to the first and second clients, the synchronization data permitting update of the graphical displays on each of the first and second clients during the editing session to reflect application of the accepted edit requests to the respective first and second sub-regions.

40. (Previously presented) A machine-readable storage medium having stored thereon data representing sequences of instructions which, when executed by a processor, cause the processor to perform steps comprising:

transmitting at least a portion of a PCB master design during an editing session throughout which each of first and second users may edit exclusive sub-portions of a PCB master design and view edits made to the PCB master design by the other of the first and second users during the editing session, wherein

the PCB master design portion includes first and second exclusive sub-portions transmitted to the first and second users at respective first and second clients for simultaneous graphical display on each of said clients,

each of the graphical displays on said clients includes a representation of common PCB artwork corresponding to a region of the PCB master design, the region including first and second sub-regions respectively corresponding to the first and second exclusive sub-portions,

the displayed common PCB artwork includes a plurality of PCB design objects associated with the first sub-region and a plurality of PCB design objects associated with the second sub-region,

the first client can simultaneously edit PCB design objects associated with the first sub-region and view edits being made to PCB design objects associated with the second sub-region, and

the second client can simultaneously edit PCB design objects associated with the second sub-region and view edits being made to PCB design objects associated with the first sub-region;

receiving edit requests from the first and second clients during the editing session;

accepting requests from the first client to edit PCB design objects associated with the first sub-region;

accepting requests from the second client to edit PCB design objects associated with the second sub-region;

rejecting requests from the first client to edit PCB design objects associated with the second sub-region;

rejecting requests from the second client to edit PCB design objects associated with the first sub-region; and

transmitting synchronization data to the first and second clients, the synchronization data permitting update of the graphical displays on each of the first and second clients during the editing session to reflect application of the accepted edit requests to the respective first and second exclusive sub-portions.